DOCUMENT RESUME

ED 316 642 CE 052 871

AUTHOR Vanis, Mary I.
TITLE Tapping Workforce Potential: A Workplace Literacy Model for Innovative Partnerships between Industry and Community Colleges.
INSTITUTION Digital Equipment Corp., Tempe, AZ.; Glendale Community Coll., Ariz.; Rio Salado Community Coll., Ariz.
PUB DATE 89
NOTE 15p.
PUB TYPE Reports - Descriptive (141)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Adult Basic Education; *Adult Literacy; *Basic Skills; *Communication Skills; Critical Thinking; English (Second Language); Functional Literacy; Institutional Cooperation; Interpersonal Competence; *Literacy Education; Problem Solving; Program Development; *School Business Relationship; School Community Relationship; Speech Skills
IDENTIFIERS Arizona (Phoenix); *Workplace Literacy

ABSTRACT

A partnership between Glendale Community College, Rio Salado Community College, and Digital Equipment Corporation provides literacy instruction to employees at Digital's Phoenix plant; from their experience are derived recommendations for those considering similar arrangements. The partnership's definition of literacy included critical thinking, problem-solving, oral communication, and interpersonal skills, as well as the ability to read, write, and compute. The following recommendations were made: (1) reach consensus on the definition of literacy, based on the context in which it is to be used; (2) ensure linkage with a broad base of employees; (3) facilitate an education process with the partnership on literacy; (4) identify industry managers who are well educated about their own work force training needs and skill levels; (5) confirm that the manufacturing division and the training staff within the company are linked to ensure that they have the same perception of needed training; (6) identify one focal person from each partner, and then use others as resource people; and (7) set realistic goals in the management of change for all partners. The partnership conducted a needs assessment, developed a basic literacy skills and English-as-a-Second-Language curriculum, and delivered the instruction. Two important elements in all of the courses included the use of job-related materials and curriculum modules for short-term and flexible scheduling of classes. (CML)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED316642

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Rio Salado Community College

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Workplace Literacy

Tapping Workforce Potential

Researched and authored by:
Dr. Mary I. Vanis
Edited by:
Mrs. Naila Erwin
Dr. Homero Lopez

CE 052 871

A Report Developed by:
Workplace Literacy Partnership
Glendale Community College, Rio Salado Community College, Digital Equipment Corporation

TAPPING WORKFORCE POTENTIAL

A WORKPLACE LITERACY MODEL
FOR INNOVATIVE PARTNERSHIPS
BETWEEN INDUSTRY AND COMMUNITY COLLEGES

Introduction

Automation and technological advances have been rapidly re-defining the work environment of many industries and businesses throughout the country. The changes have also occurred more frequently and with substantial impact on the skill requirements of the workforce. While the work environment has been rapidly changing, the make-up of the workforce has also changed. Substantial numbers of women and minorities are now in the workplace. All of these factors have placed a strain on industries in their efforts to provide training services to their employees. Increased training and retraining concerns include the lack of basic literacy skills of their employees as a roadblock for acceptable results. These concerns, supported by the changing demographics and current statistics, have indicated that the lack of basic literacy skills of adults in or entering the workforce will continue to be an on-going issue.

Literacy as a National Agenda

Adult illiteracy has become one of our nation's most serious domestic problems. The social, economic and political costs incurred by a country where one-third of the adult population has not better than minimal literacy skills have been well publicized over the past three years. It is estimated that American businesses lose $20 billion every year as a direct result of illiteracy in the workforce.

Evidence mounts almost daily suggesting that our country is facing a serious literacy crisis -- one that jeopardizes our economy, our standard of living, and our role as a leader in the global marketplace. The numbers are alarming:

- The United States ranks 49th among 156 United Nations members in literacy.
- Approximately 26 million adult Americans are illiterate.
- Fifteen percent of our nation's workforce lack fundamental literacy skills.
- Every year, 2.5 million more illiterates enter the workforce.
- Over the next four years, estimates of 80 percent of all new jobs will require more than a high school education. Only 74 percent of Americans complete high school. One-third of these will graduate with less than adequate skills.

Digital Equipment Corporation

1970's Workforce

Digital Equipment Corporation selected Phoenix, Arizona for a computer terminals (video terminals and printers) manufacturing site in mid-1970. A warehouse was rented for start-up operations with the permanent facility opening in 1976.

The metropolitan Phoenix area had a ready pool of electronic assemblers, testers, technicians, and inspectors. Therefore, Digital had no trouble attracting employees. Also, in the late 1970's and early 1980's, the skill level of employees required minimal technical skills other than hand soldering, mechanical assembly, simple inspection and test processes. Assemblers worked from basic written assembly instructions with illustrations or models to build from and received hands-on training on the line in addition to classroom instruction. Therefore, the employees in manufacturing needed little language ability to be productive and produce quality products.

From the beginning, the Phoenix plant made a commitment to "mirror the population of the community." They worked to make affirmative action hires and promotions. Internal training emphasized multicultural awareness through their "Excellence through Diversity" and "Handicapped Awareness" programs.

Initial Literacy Concerns

In the early 1980's several events brought the literacy issue to the attention of the Phoenix managers and supervisors. Those events were:

- The documentation and implementation of an "Operator Certification" which was to insure the competence of the manufacturing assemblers/operators.
- The introduction of a more complex mechanical assembly, the building of the print head for its dot matrix printers.
- The introduction of an electronic mail system for corporate-wide communication.

These events brought several areas of concern to light. Employees with limited English proficiency had difficulty with the certification test and assessment process as did those employees who were native English speakers but lacked basic reading, writing and math skills. Many employees faced test anxiety, therefore were able to demonstrate competency to meet the certification process but were not able to pass the written exam. Physical limitations of the handicapped employees also presented concerns related to the certification process. The new electronic mail system required that employees have computer literacy skills, who for many meant having to interact with a computer for the first time.

Decision Point

By 1986, two major events brought the Phoenix plant to a decision point which necessitated the need for a workplace literacy program:

- The introduction of a new, more sophisticated, computer product with a more advanced assembly and testing process required.
- The work style of the plant was in transition to a more collaborative team approach defined as the "Continuous Improvement Through Employee Involvement" (CITEI) program.

Development of the Partnership

Through the involvement of a senior trainer from Digital on the President's Business and Industry Council of Glendale Community College, a partnership evolved which assisted Digital in addressing their literacy problem. Through the initiation of Glendale Community College staff, and with the assistance of Rio Salado Community College staff, a pilot effort was initiated to better assess the literacy problem in the Phoenix plant and develop a training program to address those training needs.

Digital Equipment Corporation

Digital's voluntary participation in the Council was a direct result of their need to identify resources in the community to address their education and training needs. The development of their workplace literacy program became one of the major projects of the Council. Their objective was to examine the problem of illiteracy in the workplace and to propose strategies for the involvement of community colleges in resolving the illiteracy problem.

Digital's commitment to the project was reflected in their commitment of resources. They contributed assessment, instructional, and supply costs to the program as well as classroom space, tuition reimbursement monies, and the commitment of an on-call program manager.

Glendale Community College

In addition to its efforts through the President's Business and Industry Council, Glendale Community College also has had a substantial and very comprehensive basic literacy skills and English as a Second Language program. They were committed to the pilot program in an effort to better understand literacy needs of industry and apply those identified needs to the basic skills and occupational programs on campus. The project also provided a mechanism for college faculty and staff to become actively involved with an industry on-site to develop an educational program.

Rio Salado Community College

Rio Salado Community College, a non-campus based institution, has had as part of its mission to provide educational services to industries in-plant. They also provided an excellent resource to the project through its large, nationally recognized, adult literacy program. The college was committed to the project to better understand industry specific training needs as it relates to literacy and incorporate those needs into a workplace literacy training program.

In a collaborative spirit, the two colleges worked to address Digital's literacy problem. The colleges committed resources which included the assignment of administrative staff, full-time and part-time faculty, a curriculum design specialist and an assessment specialist. They also committed additional monies to support the research, bring in national experts and resource people, and pilot the instructional delivery approach.

Program Development

The continuing concern by management in the Phoenix plant related to technological changes and the development of the work team concept forced the decision to proceed with the development of a program to address the literacy and English as a Second Language needs of the employees. The continued involvement by a senior trainer on the college's Business and Industry Council provided for the access to resources within the community colleges and the industry to assist in the development of such a program.

Faculty and staff from both Glendale Community College and Rio Salado Community College meet with the management and the training staff to determine the direction and scope of the basic skills and English as a Second Language program. The decision was made to develop the program in three phases:

1. To conduct a needs assessment,
2. To develop the basic literacy skills and English as a Second Language curriculum, and
3. To provide for the delivery of instruction.

Needs Assessment

The direct involvement of the Digital plant staff provided for the organization and implementation of the needs assessment process. The three major components of the assessment process were:

- Interviews - Direct labor employees, supervisors, training staff, and senior management were interviewed.
- Materials collection and analysis - The analysis included readability levels (The FORCAST Readability Index and the FRY Readability Graph were used), and writing and reading skills analysis.
- Skills Assessment - Basic literacy skills and English proficiency assessment of employees were conducted.

The needs assessment process was conducted to identify what basic skill levels the employees were currently performing at, how those skills were currently used on the job, and what basic skill requirements would be necessary to meet the job responsibilities in the near future as a result of the technological changes and the work team concept. The emphasis of the needs assessment was to involve a wide range of employees within the plant to assure a broad base of knowledge.

Curriculum Priorities

The data collected from the interviews, materials, and skill assessments identified the following as priorities for instruction:

English as a Second Language
Three (3) levels of curriculum were developed with the initial focus on survival English with a gradual integration of workplace language competencies.

Mathematics
The focus included fractions, decimals, percents, elementary quality control statistics, and calculator skills with an emphasis on job-related applications.

Writing
The initial focus was on introductory and advanced levels of writing with an emphasis on editing skills, structure and organization, and grammar review. Additional needs were identified for a transition course from English as a Second Language to basic skills, and a course integrating written and oral communication skills. Workplace writing activities were emphasized.

Oral Communication
The initial focus was on individual communication skills, with an emphasis on one-on-one, interpersonal, and listening skills. Additional courses included small and large group presentation skills. Workplace communication needs were emphasized.

Reading
The initial focus was on elementary reading skills (grade level 4 - 8), with some emphasis on technical reading. A later focus included critical reading and thinking skills and more advanced technical reading skills.

Additional Recommendation
Computer literacy, with an initial focus on keyboard skills, was identified to assist in communication and facilitation of the automation process.

The important elements integrated into all of the courses included:

- The use of job-related materials
- The integration of critical thinking and problem solving skills
- The inclusion of interpersonal and team building skills
- The integration of oral communication skills
- The development of curriculum modules to assure the ease of delivery through short term and flexible delivery in the scheduling of classes.

Delivery of Instruction

A commitment was made to provide the English as a Second Language classes on company time to show management support for the importance of the program. The program began with those employees assessed performing at the 0 - 4 grade levels, with a second level following after the initial pilot. The delivery of instruction began in the Summer, 1987.

The first basic literacy skills courses were offered after work hours during the Spring, 1988, which included the initial modules developed in mathematics, reading, and writing. By Fall, 1988, additional courses were offered in those areas, as well as, oral communication skills.

Significant Outcomes of the Partnership

A number of significant outcomes occurred as a result of the collaborative arrangements and cooperative working relationship between the community colleges and the industry.

Exchange of Information
The partnership allowed for an education process to occur which allowed the colleges to take industry-related information back to colleges for applications in their classrooms. The industry acquired a better understanding and appreciation for the educational institutions.

High Level Commitment
The commitment of high level decision makers at both of the colleges and the industry helped to assure a broad based impact and the allocation of resources.

Fiscal Commitment
The industry and the colleges committed substantial monies to the research and development of the program.

Extensive Communication
On-going communication took place between the colleges and the industry to assure agreement on the focus and direction of program development and implementation.

Utilization of Expertise
Extensive efforts were taken to use the expertise of the college faculty and program staff, in addition to, a wide range of industry employees. Outside resources were also used.

Long Term Commitment
The industry and the colleges both agreed to a long term commitment for the design, implementation, evaluation, and revision of the program.

Recommendations for Successful Partnerships

The following are a list of recommendations for consideration in the establishment of a partnership between educational institutions and industry.

1. Develop and reach consensus on your definition of literacy based. It should be based the context in which it is to be used.

2. Assure linkage with a broad base of employees in the industry.

3. Facilitate an education process with your partnership on literacy.

4. Identify the industry managers who are well educated about their own workforce training needs and skill levels.

5. Confirm that the manufacturing division and the training staff within the company are linked to assure that they have the same perception of needed training.

6. Identify one focal person from each partner, then utilize others as resource people.

7. Set realistic goals in the management of change for both the educational institutions and the industry.

Conclusion

While a successful partnership required hard work and a substantial commitment of time and resources, the advantages were numerous. The educational institutions were better able to understand and identify the factors within industry that affected the increased need for basic literacy skills. That information would then become invaluable when the effectiveness of college academic and occupational programs was assessed. The industry was afforded the opportunity to gain a broader perspective of the resources and expertise that colleges can lend training programs.

A new definition of literacy was developed. No longer was the simple definition which included the ability to read, write, and compute adequate to meet the needs of the changing workforce. The definition was expanded to include critical thinking and problem solving skills, oral communication skills, and interpersonal skills. It was also found that basic computer literacy would become essential for employees to keep pace with the rapid automation of the manufacturing industry.

"*. . . We will not collapse tomorrow from a lack of adequate literacy skills, but we may find that year by year, we continue to fall behind in international competitiveness, and that society becomes more divided between those who are skilled and those who are not. If information and technology continue to increase their importance in work and everyday life, even the average literate American will experience difficulty in meeting the literacy demands of the more skilled employment opportunities and in understanding the more complex issues of everyday life.*"

The Subtle Danger by The Educational Testing Service

NOTES

Workplace Literacy Partnership

Glendale Community College, 6000 W. Olive Ave., Glendale, AZ 85302 (602) 435-3000

Rio Salado Community College, 640 N. 1st Ave., Phoenix, AZ 85003 (602) 223-4280

Digital Equipment Corp., 1901 W. 14th Street, Tempe, AZ 85281 (602) 894-5600